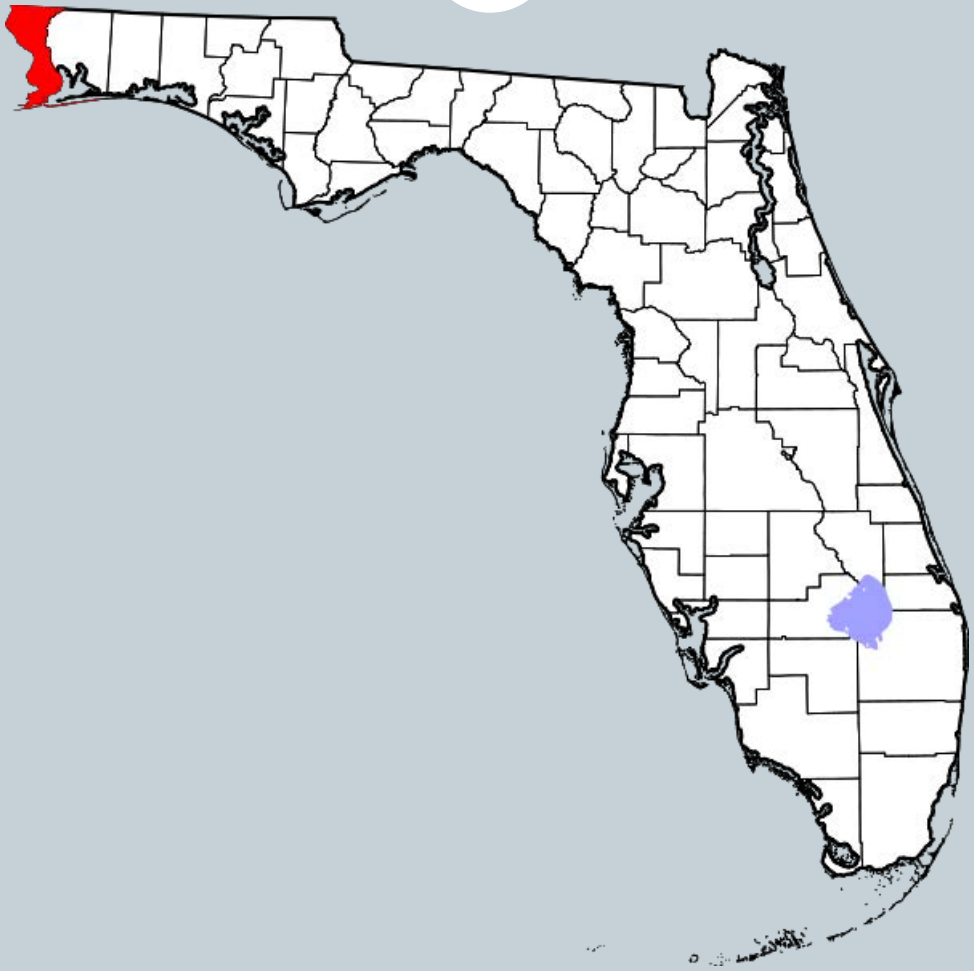
Perdido LF-Gas to Electricity

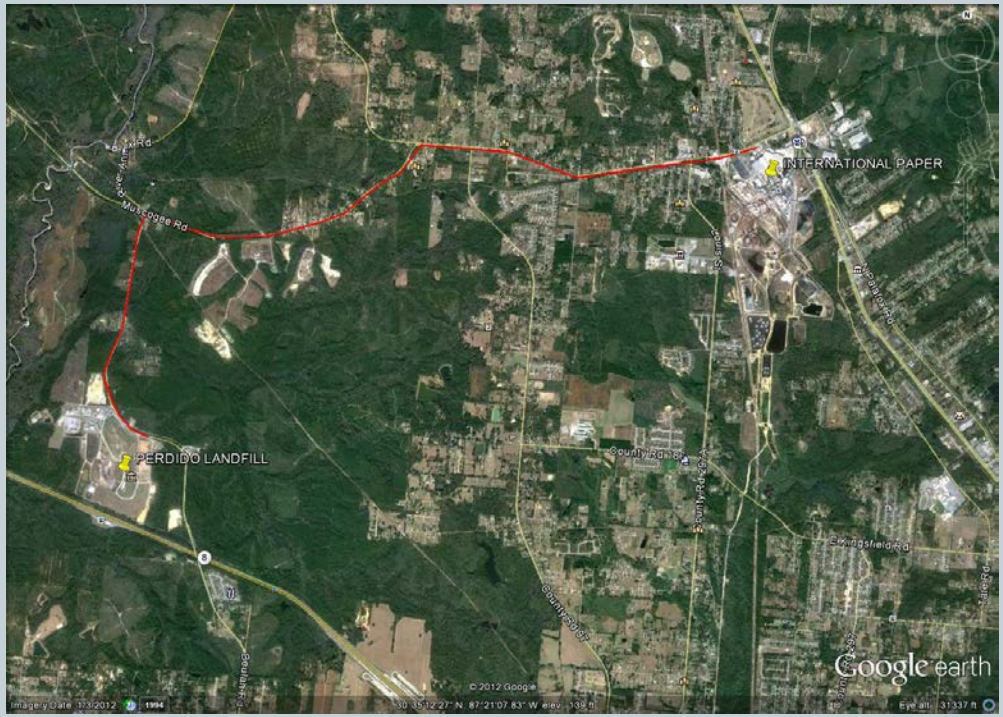
LESSONS LEARNED:CHALLENGES AND SUCCESSES

Escambia County, Florida



Background

- Perdido LF Gas-to-Energy Project (1997-2008)
  - Direct Use by Paper Mill (IP)
  - LFG piped from Perdido Landfill to IP



Direct Use of LFG

- Landfill Gas fueled IP boiler
- Project developed and managed by 3rd party vendor
- Vendor managed the gas wellfield
- County received minimum compensation from vendor for Gas Rights
- Vendor received compensation from IP for fuel used

Project Issues

- Demand for LFG at IP for fuel fell off
- LFG compliance at Perdido LF not a priority for vendor
- Surface and boundary emissions increased
- Vendor reluctant to implement additional control measures
- Contract grey areas

Rebirth of LFG Beneficial Reuse

- Contract terminated between County and Vendor
- In 2009 County solicited proposals for a new LFG to energy project
- Received proposals for high Btu, electricity, direct use
- Chose LFG-to-electricity technology

Project Overview

- Partnership with Gulf Power (Southern Company)
- Contract contingent on County producing 1200 scfm
- Initially 3.2 MW of electrical generation with buildout capacity up to 6.4 MW.
- DOE EECBG enabled County to make extensive wellfield upgrades
- Electrical Plant self-funded by Gulf Power
- County receives compensation from Gulf Power per mmBtu

DOE Grant

- EECBG funds of $900k enabled County to install a new header line, laterals and gas wells and meet the scfm requirement
- LFG quantity and quality enhanced

LFG-to-Electricity

- Landfill wellfield collecting ~1,200 scfm
- Methane fraction 54-56%
- Gulf Power- 2 x 3520 (1.6 MW) CAT Engines

Unique Project Aspects

- County/ Utility Partnership
- No 3rd party developer
- Plant operator hired by Gulf Power is the same entity hired by Escambia County to operate the wellfield
- Only LFG to electricity project in Gulf Power's service area (Alabama border to Apalachicola River)

Project Successes

- Enhanced gas quality and control
- Improved LFG compliance
- Source of renewable energy for years to come
- Escambia County receives a revenue from sale of landfill gas
- Positive partnership

Questions?